

SOCIOECONOMIC  
ANALYSIS  
PROPOSED RULE

REGULATION 6, RULE 2:  
EMSSIONS FROM  
COMMERCIAL COOKING EQUIPMENT

March 21, 2007

Prepared for  
Bay Area Air Quality  
Management District

Prepared by

**Applied Development Economics**

100 Pringle Avenue, Suite 560 • Walnut Creek, California 94596 • (925) 934-8712

2151 River Plaza Drive, Suite 150 • Sacramento, California 95833 • (916) 923-1562

[www.adeusa.com](http://www.adeusa.com)



# CONTENTS

1. Executive Summary .....	1
Introduction .....	1
Summary .....	1
2. Description of the Proposed Rule .....	2
Current Status of the Rule.....	2
Proposed Rule Amendments .....	2
Emissions Reductions.....	3
3. Impact of Proposed Rule Amendments .....	4
Methodology .....	4
Regional Demographic Trends.....	5
Regional Economic Trends.....	6
Description of Affected Industries .....	8
Compliance Costs.....	10
Business Response to Compliance Costs.....	12
Impact Analysis.....	12
Impact on Small Business.....	15
Definition of Small Business Per California Statute .....	15
Small Business Impact Analysis .....	15

# 1. EXECUTIVE SUMMARY

---

## INTRODUCTION

This report describes the socioeconomic impacts of proposed Regulation 6, Rule 2 that, if implemented, will help the Bay Area Air Quality Management District (District) to achieve and maintain state ambient air quality standards for ozone and particulate matter. Following this summary, the report summarizes the proposed rule requirements and describes the methodology for the socioeconomic analysis. The report also describes the economic characteristics of sites affected by the proposed rule along with the socioeconomic impacts of the proposed rule.

## SUMMARY

The proposed rule affects Bay Area restaurants. Specifically, it affects full-service restaurants and limited-service restaurants. A total of 1,093 restaurants are expected to be impacted. Of these 1,093, 586 are expected to be full-service and 507 are expected to be limited-service. Combined, the impacted restaurants generate sales of approximately \$905.6 million annually. Profits for these businesses are estimated at nearly \$143.2 million.

For each type of affected charbroiler, there are at least three control technologies that represent less than ten percent of profits for impacted sites. The available control technologies range in cost between \$2,028 and \$100,111 annually. Most of the control options cost less than \$10,000 per year.

The analysis concludes that the costs associated with compliance will not result in significant economic dislocation or job losses. The total annual cost of compliance is far below the 10 percent of profits threshold for significant impact. Additionally, it is believed that small businesses will not be disproportionately impacted by the proposed rule.

## 2. DESCRIPTION OF THE PROPOSED RULE

---

### CURRENT STATUS OF THE RULE

The District does not currently have a rule which directly regulates emissions from commercial cooking equipment in restaurants. Senate Bill 656 relating to particulate matter implementation schedules (SB 656) requires that all air districts in California adopt an implementation schedule that prioritizes appropriate measures for reducing PM emissions. Under Further Study Measure 3 (FS 3)<sup>1</sup>, the District proposes to examine the feasibility of reducing ozone precursor emissions from restaurants. The District is considering Regulation 6, Rule 2 as a means to reduce restaurant emissions of PM and VOCs in the Bay Area. This rule will fulfill a commitment proposed in the District's SB 656 Particulate Matter Implementation Schedule and is consistent with FS 3.

### PROPOSED RULE AMENDMENTS

With consideration to comments the District has received, Regulation 6, Rule 2, proposes the following requirements for commercial cooking equipment in restaurants:

- Require owners and/or operators of chain-driven charbroilers to install a catalytic oxidizer within one year of rule adoption. An alternative control device that has been certified by the manufacturer to reduce emissions to no more than 0.74 lbs of PM10 and 0.23 lbs of organic compounds per 1,000 lbs of meat cooked may be substituted for a catalytic oxidizer.
- Require that a control technology be installed on all existing under-fired charbroilers with an aggregate grill surface of at least 10 square feet. The control technology must be certified by the manufacturer to emit no more

---

<sup>1</sup> Further Study Measure 3 was part of the District's 2005 Ozone Strategy, directed towards attainment of the State's one-hour ozone standard.

than 1.9 lbs of PM10 per 1,000 lbs of meat cooked and must be installed within five years of rule adoption.

- Require owners and/or operators of newly installed under-fired charbroilers, installed two years after rule adoption, to exhaust the cooking emissions through a control device. This will apply to units with an aggregate cooking surface of ten square feet or greater.
- Require owners and/or operators of applicable newly installed under-fired charbroilers to vent their emissions through a listed ventilation hood.
- Owners and/or operators of chain-driven charbroilers and applicable under-fired charbroilers will be required to register their equipment with the District.
- Owners and/or operators of applicable new and existing under-fired charbroilers will be required to retain records for up to five years on the date of installation of the control, the contract in which the control was purchased, and any maintenance and repairs performed on the control device. The repair logs will contain the date, time, and description of the work that was performed.
- Owners and/or operators of chain-driven charbroilers will be required to maintain records on the date of installation and any maintenance and repairs performed on the control device.

## EMISSIONS REDUCTIONS

BAAQMD estimates that the proposed rule will reduce combined PM and VOC emissions from chain-driven charbroilers by 0.53 tons per day (tpd). Chain-driven charbroilers in the Bay Area currently account for 0.63 tpd of combined PM and VOC emissions. For under-fired charbroilers, the proposed rule will reduce PM emissions by between 0.25 and 0.44 tpd depending upon the type of meat cooked.

### 3. IMPACT OF PROPOSED RULE AMENDMENTS

---

This section of the socioeconomic analysis describes demographic and economic trends in the San Francisco Bay Area (Bay Area) region. Following an overview of the methodology for the socioeconomic analysis, the first part of this section compares the Bay Area against California and provides a context for understanding demographic and economic changes that have occurred within the Bay Area between 1995 and 2005. After an overview of Bay Area industries, we focus on the following industries:

- NAICS 722110, Full-service Restaurants<sup>2</sup>
- NAICS 722211, Limited-service Restaurants<sup>3</sup>

Then the impacts on businesses within these industries of the proposed changes to Regulation 6, Rule 2 concerning emissions from commercial cooking equipment are analyzed. For the purposes of this report, the Bay Area region is defined as Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties.

#### METHODOLOGY

The socioeconomic analysis of the proposed rule concerning emissions from commercial cooking equipment involves the use of information provided directly by BAAQMD. In addition, it utilizes secondary data used to describe the industries affected by the proposed rule. Based on information provided by BAAQMD staff, ADE determined that the impacts would affect full-service and limited-service restaurants.

---

<sup>2</sup> NAICS 722110: Full-service Restaurants consists of restaurants patrons order and are served while seated and pay after eating.

<sup>3</sup> NAICS 722211: Limited-service Restaurants consists of restaurants where patrons select items and pay before eating (e.g. fast food restaurants, pizza parlors, etc.).

With this information we began to prepare economic descriptions of the industry groups of which the impacted sites are a part, as well as to analyze data on the number of jobs, sales levels, the typical profit ratios and other economic indicators for the Bay Area businesses. ADE also reviewed and summarized documents available to the public such as annual reports for publicly traded companies.

With the annual reports and data from the US Economic Census, ADE was able to estimate revenues and profit ratios for the sites impacted by the proposed rule. In calculating aggregate revenues generated by full- and limited-service restaurants in the Bay, ADE estimated average annual revenues using the 2002 US Economic Census.<sup>4</sup> Using annual reports for publicly traded restaurant operators and other publicly available data, ADE calculated ratios of profit per dollar of sales for the businesses on which the analysis focused. To estimate employment, ADE used employment data from the California Employment Development Department.

The result of the socioeconomic analysis shows what proportion of profit the compliance costs represent. Based on a given threshold of significance, ADE discusses in the report whether the affected sites are likely to reduce jobs as a means of recouping the cost of compliance or as a result of reducing business operations. To the extent that such job losses appear likely, the indirect multiplier effects of the job losses area estimated using a regional IMPLAN input-output model.

## REGIONAL DEMOGRAPHIC TRENDS

The Bay Area experienced moderate population growth from 1995 to 2005. Between 1995 and 2000, the nine-county region increased by nearly 6.7 percent, from 6.3 million in 1995 to almost 6.8 million in 2000. From 1995 to 2005, the population increase was from 6.3 million to close to 7.1 million for an increase of approximately 10.4 percent. At the same time, California had population growth of almost 14 percent.

---

<sup>4</sup> The average revenue estimates were calculated per Bay Area establishment and inflated to current dollars.

Within the Bay Area, the greatest percentage increase occurred in Contra Costa County. From 1995 to 2005 Contra Costa increased its population by nearly 15 percent. All other Bay Area counties had population increases slower than the State. The smallest percentage increase occurred in Marin County where population grew less than 5.5 percent from 1995 to 2005. Table 1 shows the population changes that have occurred in the Bay Area and California from 1995 to 2005.

**Table 1**  
**Population Growth: San Francisco Bay Area**

	Population			Percent Change		
	1995	2000	2005	95-00	00-05	95-00
California	31,617,000	33,871,648	36,728,196	6.7%	7.8%	13.9%
Bay Area	6,329,800	6,783,760	7,067,403	6.7%	4.0%	10.4%
Alameda County	1,332,900	1,443,741	1,500,228	7.7%	3.8%	11.2%
Contra Costa County	869,200	948,816	1,019,101	8.4%	6.9%	14.7%
Marin County	238,100	247,289	251,820	3.7%	1.8%	5.4%
Napa County	116,800	124,279	132,990	6.0%	6.6%	12.2%
San Francisco County	741,600	776,733	792,952	4.5%	2.0%	6.5%
San Mateo County	673,300	707,161	719,655	4.8%	1.7%	6.4%
Santa Clara County	1,568,200	1,682,585	1,752,653	6.8%	4.0%	10.5%
Solano County	368,000	394,542	420,307	6.7%	6.1%	12.4%
Sonoma County	421,700	458,614	477,697	8.0%	4.0%	11.7%

Source: Applied Development Economics, based on household population estimates from The California Department of Finance

## REGIONAL ECONOMIC TRENDS

The Bay Area is one of the world's greatest regional economies. It benefits from pre-eminent knowledge-based industries, with competitive strength flowing from an unmatched culture of entrepreneurship, world-leading research institutions, and some of the nation's best educated and most highly skilled workforce. With these remarkable advantages, it has led through innovation in a wide range of research and industrial fields.

Many of the Bay Area's most prominent industries are manufacturing related. From Intel to PowerBar, Bay Area manufacturers are often high profile companies with world-renowned recognition. From small to large, Bay Area industry has been dynamic, creating wealth and jobs in both the export sector and local serving industries.

The economic base is typically comprised of export industries within the manufacturing, minerals-resource extraction, and agricultural sectors. There are also the “local support industries” such as retail or service sectors, the progress of which is a function of the economic base and demographic changes, and more so the latter than the former. As population increases in a given area, demand for services – such as realtors, teachers, healthcare – increases, as does demand for basic retail items like groceries, gas for commuting, or clothing at the local apparel shops.

As of 2005, the professional and business services sector was the largest employer in the region, at 529,100 jobs or 17 percent of all private and public sector jobs. This is a change from 1995 when professional and business services accounted for 16 percent of all Bay Area employment. During the same period, professional and business services increased 14 percent. The next largest industry in the Bay Area is public service, or government, with 468,100 jobs. In 2005, government accounted for 15 percent of all Bay Area employment. From 1995 to 2005, government had one of the lowest growth rates of all industries at less than 6 percent. Two other industries came close to manufacturing in total employment. Retail trade and education & health care both made up 11 percent of total employment and had only a few thousand jobs less than manufacturing. Unlike manufacturing, both retail trade and education & health care had significant job gains from 1995 to 2005. All other industries made up less than manufacturing in total employment in 2005. Table 2 shows Bay Area industry sectors and their trends from 1995 to 2005.

**Table 2**  
**Employment Profile of the San Francisco Bay Area, 1995-2005**

<b>Industry</b>	<b>1995</b>	<b>2000</b>	<b>2005</b>	<b>% of Total Employment in 2005</b>	<b>% Change 1995 - 2000</b>	<b>% Change 2000 - 2005</b>
Farm	21,100	25,800	20,000	1%	22%	-22%
Natural Resources & Mining	2,920	4,600	4,560	0%	58%	-1%
Construction	105,200	165,700	164,100	5%	58%	-1%
Manufacturing	428,800	484,500	351,300	11%	13%	-27%
Wholesale Trade	121,700	138,800	122,900	4%	14%	-11%
Retail Trade	304,900	350,600	336,600	11%	15%	-4%
Transportation, Warehousing and Utilities	116,600	125,600	100,400	3%	8%	-20%
Information	92,100	151,600	112,300	4%	65%	-26%
Financial Activities	189,300	198,500	213,000	7%	5%	7%
Professional and Business Services	464,400	670,300	529,100	17%	44%	-21%
Educational and Health Services	299,300	334,300	361,600	11%	12%	8%
Leisure and Hospitality	260,400	297,700	311,000	10%	14%	4%
Other Services	100,700	110,800	109,900	3%	10%	-1%
Government	442,100	465,200	468,100	15%	5%	1%
<b>Total</b>	<b>2,949,520</b>	<b>3,524,000</b>	<b>3,204,860</b>	<b>100%</b>	<b>19%</b>	<b>-9%</b>

Source: Applied Development Economics from data supplied by the Labor Market Information Division of the California Employment Development Department

## DESCRIPTION OF AFFECTED INDUSTRIES

The proposed to Regulation 6, Rule 2 affect industries in the following NAICS codes:

- NAICS 722110, Full-service Restaurants
- NAICS 722211, Limited-service Restaurants

What follows is a description of these industries, along with their economic trends in the Bay Area, and it provides a comparison between 2001 and 2005. Data in Table 3 below are for all sources, not just the major sites that have been focused on in the Bay Area. As shown in Table 3, Bay Area employment in both full- and limited-service restaurants increased over the four-year period from 2001 to 2005, growing 2.49 and 1.04 percent respectively. This is consistent with the general trend in Accommodation and Food Service employment during the same period. Statewide, however, employment in full- and limited-service restaurants increased 9.75 and 4.37 percent respectively with a 7.96 percent increase in overall Accommodation and Food Service employment. In short, while employment in Bay Area full-

and limited-service restaurants increased between 2001 and 2005, this growth was below the statewide average.

**Table 3**  
**Employment Trends: Industries Affected by Proposed Amendments, 2001 - 2005**

	2001	2005	Change from 2001 to 2005	% Change from 2001 to 2005
<b>Bay Area Region</b>				
Accommodation and food services	363,124	369,563	6,439	1.77%
Full-service restaurants	151,309	155,083	3,774	2.49%
Limited-service restaurants	96,192	97,189	997	1.04%
<b>California</b>				
Accommodation and food services	1,613,174	1,741,515	128,341	7.96%
Full-service restaurants	636,491	698,535	62,044	9.75%
Limited-service restaurants	525,485	548,428	22,943	4.37%

Source: Calculations by Applied Development Economics; Based upon California Employment Development Department, Quarterly Census of Employment and Wages, BAAQMD

Table 4 identifies the economic characteristics of the specific sites affected by the proposed rule to Regulation 6, Rule 2. This table shows that the affected full- and limited-service restaurants employ an estimated 18,483 workers. These 1,093 sites have an estimated aggregate payroll of more than \$312.2 million, and estimated revenues of nearly \$905.6 million. In calculating aggregate revenues generated by impacted businesses, the consultant utilized the 2002 US Economic Census to estimate an average revenue figure per establishment, expressed in current dollars.

**Table 4**  
**Economic Characteristics of Impacted Businesses in the San Francisco Bay Area**

	No. of Businesses	Estimated Sales	Estimated Employment	Estimated Payroll
<b>Using Chain-driven Charbroilers</b>				
Full-service Restaurants	310	\$279,873,400	5,790	\$106,866,128
Limited-service Restaurants	244	\$181,253,791	3,629	\$53,067,592
Subtotal	554	\$461,127,192	9,419	\$159,933,720
<b>Using Under-fired Charbroilers</b>				
Full-service Restaurants	275	\$248,460,379	5,140	\$94,871,462
Limited-service Restaurants	264	\$195,988,192	3,924	\$57,381,538
Subtotal	539	\$444,448,571	9,064	\$152,253,000
<b>Total Full-service Restaurants</b>	<b>586</b>	<b>\$528,333,779</b>	<b>10,931</b>	<b>\$201,737,590</b>
<b>Total Limited-service Restaurants</b>	<b>507</b>	<b>\$377,241,984</b>	<b>7,552</b>	<b>\$110,449,130</b>
<b>Total Impacted Restaurants</b>	<b>1,093</b>	<b>\$905,575,763</b>	<b>18,483</b>	<b>\$312,186,720</b>

Source: U.S. Economic Census 2002; California Employment Development Department Quarterly Census of Employment and Wages; Calculations by Applied Development Economics.

Table 4 also estimates the number of businesses using chain-driven charbroilers versus under-fired. These estimates assume that each restaurant has either a chain-driven or an under-fired charbroiler, which is consistent with the PES study that District staff used to estimate the number of chain-driven versus under-fired charbroilers present in the Bay Area. The consultant then used a weighted average to estimate number of full- and limited-service restaurants that utilize each type of charbroiler.

As Table 5 shows, approximately seven percent of the Bay Area’s full-service restaurants will be impacted by the proposed rule. Nearly eight percent of the Bay Area’s limited-service restaurants will be impacted. The impacted sites represent 1.56 percent of the State’s full-service restaurants and 1.38 percent of the State’s limited-service restaurants.

**Table 5**  
**Employment at Impacted Sites Relative to Bay Area and California**

	No. of Businesses	Estimated Employment	Impacted Sites as a % of Bay Area	Impacted Sites as a % of California
			Total	Total
Full-service restaurants	586	10,931	7.05%	1.56%
Limited-service restaurants	507	7,552	7.77%	1.38%
<b>Total</b>	<b>1,093</b>	<b>18,483</b>		

Source: U.S. Economic Census 2002; California Employment Development Department Quarterly Census of Employment and Wages; Calculations by Applied Development Economics.

## COMPLIANCE COSTS

This section discusses the compliance costs associated with the proposed rule. The compliance costs include both capital and operating costs; and, are amortized over ten years. For both types of charbroilers, as well as installation of listed hoods with controls, multiple compliance options are available. It is believed that compliance will require selection of only one available option.

Table 6 details the annualized costs associated with the compliance options available for chain-driven charbroilers. Amortized over ten years, three of the five options available

cost less than \$10,000 annually. One of them costs less than \$12,000; one only slightly more than \$2,000.

**Table 6**  
**Annualized Control Costs (Chain-Driven Charbroilers)**

<b>Control</b>	<b>Annualized Capital Cost</b>	<b>Annual Recurring O&amp;M Costs</b>	<b>Total Annual Cost</b>
Catalytic Oxidizer	\$1,278	\$750	\$2,028
Fiber Bed Filters	\$3,905	\$7,500	\$11,405
Thermal Incinerator	\$4,452	\$95,659	\$100,111
Electrostatic Precipitators	\$4,828	\$2,000	\$6,828
Wet Scrubber	\$3,838	\$2,000	\$5,838

Source: BAAQMD

Table 7 illustrates the annualized costs for the available compliance options for under-fired charbroilers. Of the four options available, two cost less than \$10,000 per year when amortized over ten years. Of the two options that cost more than \$10,000, one of them is still less than \$12,000.

**Table 7**  
**Annualized Control Cost (Under-Fired Charbroiler)**

<b>Control</b>	<b>Annualized Capital Cost</b>	<b>Annual Recurring O&amp;M Costs</b>	<b>Total Annual Cost</b>
Electrostatic Precipitators	\$5,254	\$2,000	\$7,254
Thermal Incinerator	\$4,452	\$95,659	\$100,111
Wet Scrubber	\$5,214	\$6,582	\$11,796
HEPA Filters	\$5,254	\$3,000	\$8,254

Source: BAAQMD

This section concludes with Table 8, which shows the annualized costs for the various options associated with installing a listed hood with controls on new under-fired charbroilers. As with the control options available for existing under-fired charbroilers (Table 7), two of the four options cost less than \$10,000 per year when amortized over ten years. One of the remaining two options costs less than \$12,000.

**Table 8**  
**Annual Cost to Install a Listed Hood with Controls**

<b>Control</b>	<b>Annualized Capital Cost</b>	<b>Annual Recurring O&amp;M Costs</b>	<b>Total Annual Cost</b>
Electrostatic Precipitators	\$5,396	\$1,835	\$7,231
Thermal Incinerator	\$4,595	\$95,494	\$100,089
Wet Scrubber	\$5,356	\$6,417	\$11,773

---

HEPA Filter	\$5,396	\$2,835	\$8,231
-------------	---------	---------	---------

---

Source: BAAQMD

## BUSINESS RESPONSE TO COMPLIANCE COSTS

Sites impacted by the proposed emissions from commercial cooking equipment rule may respond in a variety of ways when faced with new regulatory costs. These responses may range from simply absorbing the costs and accepting a lower rate of return to shutting down the business operation all together. Businesses may also seek to pass the costs on to their customers in the form of higher prices, although, in the restaurant industry, price increases typically have a significant impact on demand for meals. More likely, they may renew efforts to increase productivity and reduce costs elsewhere in their operation in order to recoup the regulatory costs and maintain profit levels.

## IMPACT ANALYSIS

The businesses' responses to increased compliance costs hinge on the effect of the costs on the profits generated at the affected sites. An impact on estimated profits greater than 10 percent implies that the source would experience serious economic effects because of the compliance cost. When compliance costs are greater than 10 percent of estimated profits, companies typically respond to the impact by laying off some workers, reducing hours of operation, or, in the most drastic case, possibly closing restaurants.

Using the compliance cost estimates developed for the proposed emissions from commercial cooking equipment rule, ADE calculated the socioeconomic impacts of the proposed actions. In calculating impacts on profits, ADE used annual reports of publicly-traded companies that operate full- and limited-service restaurants. Based on this information, we estimate that the impacted businesses generated a combined profit of \$143.2 million on \$905.6 million in revenues.

Table 9 details the projected impacts of compliance with the proposed emissions reductions on the profits of affected sites, which have chain-driven charbroilers. Though one available option, thermal incinerators, would have a significant impact, four of the five represent less than ten percent of profits for impacted sites. It is expected that impacted businesses will not opt for thermal incinerators, since there are four available technologies whose costs represent less than ten percent of profits. Therefore, compliance with the proposed rule for chain-driven charbroilers is not expected to have a significant socioeconomic impact.

**Table 9**  
**Impact of Estimated Compliance Cost on Estimated Profits at Bay Area Restaurants (Chain-driven Charbroilers)**

<b>Control</b>	<b>No. of Businesses</b>	<b>Estimated Profits</b>	<b>Annual Compliance Cost</b>	<b>Cost as % of Profits</b>
Catalytic Oxidizer	554	\$72,547,905	\$1,123,512	1.55%
Fiber Bed Filters	554	\$72,547,905	\$6,318,370	8.71%
Thermal Incinerator	554	\$72,547,905	\$55,461,494	76.45%
Electrostatic Precipitators	554	\$72,547,905	\$3,782,712	5.21%
Wet Scrubber	554	\$72,547,905	\$3,234,252	4.46%

Source: ADE calculations, based upon 2002 US Economic Census; CA Employment Development Department, Quarterly Census of Employment and Wages; SEC 10k Filings

Note: Assumes a 14.4 percent profit ratio for full-service restaurants and a 16.1 percent ratio for limited-service

Table 10 discusses the projected impacts of compliance with the proposed emissions reductions on the profits of affected sites, which have existing under-fired charbroilers. For these pieces of equipment, there are four available control technologies from which impacted business may choose. While one of them, thermal incinerators, represents a greater than ten percent impact on profits, three of them do not. Compliance with the proposed rule for existing under-fired charbroilers is not expected to have a significant socioeconomic impact. Since there are three options which account for less than ten percent of profits, it is expected that affected businesses will opt for one of these control technologies.

**Table 10**  
**Impact of Estimated Compliance Cost on Estimated Profits at Bay Area Restaurants (Under-fired Charbroilers)**

<b>Control</b>	<b>No. of Businesses</b>	<b>Estimated Profits</b>	<b>Annual Compliance Cost</b>	<b>Cost as % of Profits</b>
Electrostatic Precipitators	539	\$70,646,275	3,909,906	5.53%
Thermal Incinerator	539	\$70,646,275	53,959,829	76.38%
Wet Scrubber	539	\$70,646,275	6,358,044	9.00%
HEPA Filters	539	\$70,646,275	4,448,906	6.30%

Source: ADE calculations, based upon 2002 US Economic Census; CA Employment Development Department, Quarterly Census of Employment and Wages; SEC 10k Filings

Note: Assumes a 14.4 percent profit ratio for full-service restaurants and a 16.1 percent ratio for limited-service

Table 11 evaluates the projected impacts of compliance with the proposed emissions reductions on the profits of affected sites, which install listed hoods with control technologies when they install new under-fired charbroilers. As with retrofitting existing under-fired charbroilers with available control technologies, there are four options for listed hoods. Once again, thermal incinerators represent a greater than ten percent profit impact. However, there are three control technologies, which do not. It is expected that affected businesses will opt for one of the three control technologies which do not represent a greater than ten percent profit impact. Therefore, compliance with the proposed rule for installation of new under-fired charbroilers is not expected to have a significant socioeconomic impact.

**Table 11**  
**Impact of Estimated Compliance Cost on Estimated Profits at Bay Area Restaurants (Listed Hoods)**

<b>Control</b>	<b>No. of Businesses</b>	<b>Estimated Profits</b>	<b>Annual Compliance Cost</b>	<b>Cost as % of Profits</b>
Electrostatic Precipitators	1,093	\$143,194,180	7,903,483	5.52%
Thermal Incinerator	1,093	\$143,194,180	109,397,277	76.40%
Wet Scrubber	1,093	\$143,194,180	12,867,889	8.99%
HEPA Filter	1,093	\$143,194,180	8,996,483	6.28%

Source: ADE calculations, based upon 2002 US Economic Census; CA Employment Development Department, Quarterly Census of Employment and Wages; SEC 10k Filings

Note: Assumes a 14.4 percent profit ratio for full-service restaurants and a 16.1 percent ratio for limited-service

## IMPACT ON SMALL BUSINESS

### DEFINITION OF SMALL BUSINESS PER CALIFORNIA STATUTE

For purposes of qualifying small businesses for bid preferences on state contracts and other benefits, the State of California defines small businesses in the following manner:

- Must be independently owned and operated;
- Cannot be dominant in its field of operation;
- Must have its principal office located in California
- Must have its owners (or officers in the case of a corporation) domiciled in California; and,
- Together with its affiliates, be either:
  - A business with 100 or fewer employees, and an average gross receipts of \$10 million or less over the previous tax years, or
  - A manufacturer with 100 or fewer employees

### SMALL BUSINESS IMPACT ANALYSIS

Individual restaurant establishments typically qualify as small businesses in terms of employment. In fact, in the Bay Area, nearly all restaurants have less than 100 employees. The majority, 81 percent, have fewer than 20 employees. Table 12 illustrates the percent distribution Bay Area restaurants in terms of employment.

**Table 12**  
**Distribution of Bay Area**  
**Restaurants by Employment Size**

<b>No. of Employees</b>	<b>% of Restaurants</b>
1 to 4	29%
5 to 9	21%
10 to 19	31%
20 to 49	14%
50 to 99	4%
100 to 249	1%
250 to 499	0%
500 to 999	0%
<b>TOTAL</b>	<b>100%</b>

Source: ADE Calculations, based on ReferenceUSA

**Table 13**  
**Distribution of Bay Area Restaurants by**  
**Annual Sales**

<b>Annual Sales Volume</b>	<b>% of Restaurants</b>
> \$500,000	71%
\$500,000 to \$1,000,000	13%
\$1,000,000 to \$2,500,000	12%
\$2,500,000 to \$5,000,000	3%
\$5,000,000 to \$10,000,000	1%
\$10,000,000 to \$20,000,000	0%
\$20,000,000 to \$50,000,000	0%
\$100,000,000 to \$500,000,000	0%
<b>TOTAL</b>	<b>100%</b>

Source: ADE Calculations, based on ReferenceUSA

In order to qualify as a California small business, a restaurant will not only need to have less than 100 employees, but will also have to generate less than \$10 million in revenue. Based upon the data in Table 13, nearly all Bay Area restaurants generate less than \$10 million annually. Since most Bay Area restaurants also have less than 100 employees, it is assumed that most of them qualify as California small businesses.

Though most of the Bay Area's restaurants qualify as California small businesses, it is believed that they will not be disproportionately impacted by the proposed rule. The restaurant industry includes a mix of independent restaurants and national chains. In some cases, multiple franchised chain establishments are under common ownership. The data in Tables 12 and 13 do not necessarily reflect common ownership of multiple restaurants.

Also, it is believed that affected under-fired charbroilers are primarily used by larger restaurants. The proposed rule for under-fired charbroilers will only affect businesses which utilize units with an aggregate cooking surface of ten square feet or larger. Only eleven percent of the total under-fired charbroilers in the Bay Area are believed to be larger than ten square feet. Comments received by the District through the public workshops indicate that the mid-size chain restaurants do not use under-fired charbroilers of this size. Also, through the public workshop process, the district has not identified

any smaller restaurants that use affected under-fired charbroilers.

Finally, it is assumed that chain-driven charbroilers will only be used by higher volume restaurant operations. Chain-driven charbroilers allow restaurants to cook larger volumes of meat in shorter periods of time compared to other pieces of cooking equipment, such as griddles, grill tops, and ranges, which are not covered by this rule. It is believed that lower volume restaurants will exclusively use cooking equipment which is not covered by this rule. Therefore, it is believed that this rule will only affect the higher volume restaurant operations. In the event that a small business is utilizing a charbroiler covered by this proposed rule, Table 14 evaluates the revenue levels at which the compliance costs have a significant impact. For each type of charbroiler covered by the rule, there is at least one option available to businesses in each annual sales volume range<sup>5</sup> that does not represent a significant impact.

**Table 14**  
**Thresholds of Significance (Annual Revenue)**

<b>Control</b>	<b>Annual Compliance Cost</b>	<b>Profit Threshold</b>	<b>Annual Revenue Threshold</b>
<b>Chain-driven Charbroilers</b>			
Catalytic Oxidizer	\$2,028	\$20,280	\$125,998
Fiber Bed Filters	\$11,405	\$114,050	\$708,581
Thermal Incinerator	\$100,111	\$1,001,110	\$6,219,792
Electrotatic Precipitators	\$6,828	\$68,280	\$424,217
Wet Scrubber	\$5,838	\$58,380	\$362,709
<b>Under-fired Charbroilers</b>			
Electrostatic Precipitators	\$7,254	\$72,540	\$450,683
Thermal Incinerator	\$100,111	\$1,001,110	\$6,219,792
Wet Scrubber	\$11,796	\$117,960	\$732,873
HEPA Filters	\$8,254	\$82,540	\$512,812
<b>Listed Hood with Controls</b>			
Electrostatic Precipitators	\$7,231	\$72,310	\$449,254
Thermal Incinerator	\$100,089	\$1,000,110	\$6,218,425
Wet Scrubber	\$11,773	\$117,730	\$731,444
HEPA Filter	\$8,231	\$82,310	\$511,383

Source: ADE calculations, based upon BAAQMD

Note: Assumes an average 16.1 percent profit ratio

<sup>5</sup> As listed in Table 13

